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7

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11

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London, England, Royal Astronomical Society.
London, England, 3 Verulam Bldgs., Gray's Inn, The Nautical Almanac.
Lund, Sweden, University Observatory.
Madison, Wisconsin, Washburn Observatory.
Madrid, Spain, Observatorio Astronómico.
Marseilles, France, Observatoire.
Melbourne, Victoria, Observatory.
Mexico, Mexico, Sociedad Cientifica "Antonio Alzate."
Milan, Italy, Osservatorio Astronomico di Brera.
Moscow, Russia, University Observatory.
Mount Wilson, via Pasadena, Cal., Solar Observatory.
Munich, Germany, Königliche Sternwarte.
Naples, Italy, Osservatorio Astronomico.
New Haven, Connecticut, Yale University Observatory.
New York, New York, American Mathematical Society.
New York, New York, Columbia University Observatory.
Nice, France, Observatoire.
Northfield, Minnesota, Goodsell Observatory.
Oxford, England, Radcliffe Observatory.
Oxford, England, University Observatory.
Padua, Italy, Osservatorio Astronomico.
Paris, France, Bureau des Longitudes.
Paris, France, Observatoire National.
Paris, France, Rue Cassini 16, Société Astronomique de France.
Philadelphia, Pa., 105 South Fifth St., American Philosophical Society.
Potsdam, Germany, Astrophysikalisches Observatorium.
Prague, Austro-Hungary, Universitäts-Sternwarte.
Pulkowa, Russia, Imperial Observatory.
Rio de Janeiro, Brazil, Observatory.
Rome, Italy, Osservatorio Astronomico del Collegio Romano.
Rome, Italy, Specula Vaticana.
San Francisco, California Academy of Sciences.
San Francisco, California, Technical Society of the Pacific Coast.
Stockholm, Sweden, University Observatory.

Publications of the

Strassburg, Germany, Universitäts-Sternwarte.
 Sydney, New South Wales, Observatory.
 Tacubaya, Mexico, Observatorio Astronomico Nacional.
 Tokio, Japan, University Observatory.
 Toronto, Canada, Astronomical and Physical Society of Toronto.
 Toulouse, France, Observatoire.
 Turin, Italy, Osservatorio Astronomico.
 University Park, Colorado, Chamberlin Observatory.
 University of Virginia, Virginia, McCormick Observatory.
 Upper Derby, Pennsylvania, Flower Observatory, University of Pennsylvania.
 Upsala, Sweden, University Observatory.
 Vienna, Austria, K. K. Sternwarte.
 Vienna (Ottakring), Austria, Von Kuffnersche Sternwarte.
 Washington, District of Columbia, Library of Congress, Periodical Division.
 Washington, District of Columbia, National Academy of Sciences.
 Washington, District of Columbia, Naval Observatory.
 Washington, District of Columbia, Smithsonian Institution.
 Washington, District of Columbia, The American Ephemeris.
 Washington, District of Columbia, U. S. Coast and Geodetic Survey.
 Williams Bay, Wisconsin, Yerkes Observatory.
 Zurich, Switzerland, Observatory.

EXCHANGES.

Astrophysical Journal, Williams Bay, Wisconsin.
Popular Astronomy, Northfield, Minn.
 Prof. Dr. H. J. Klein, Editor of *Sirius*, Theresien St. 85, Köln-Lindenthal, Germany.
The Observatory, Greenwich, England.
The Journal of the Royal Astronomical Society of Canada, Toronto, Canada.
Revista di Astronomia, Società Astronomica Italiana, Turin, Italy.

FOR REVIEW.

[See *Publications A. S. P.*, Vol. VIII, p. 101.]

The Call, San Francisco, California.
The Chronicle, San Francisco, California.
The Examiner, San Francisco, California.
The Mercury, San Jose, California.
The Record-Union, Sacramento, California.
The Times, Los Angeles, California.
The Tribune, Oakland, California.
